VITEBSKIY, Ya.D., kandidat meditsinskikh nauk

Surgery for duodenal fistulas. Vest.khir. 77 no.5:98 My '56.
(MLRA 9:8)

1. Iz Kurganskoy oblastnoy bol'nitsy.
(DUODENUM--SURGERY) (FISTULA)

VITEBSKIY, Ya.D., kandidat meditsinskikh nauk

Intestinal loops. Khirurgiia no. 12:27-31 D' 55. (MLRA 9:7)

1. Iz khirurgicheskogo otdeleniya (zav. - Ya.D.Vitebskiy) Kurganskoy bol'nitsy (glavnyy vrach L.V.Protsenko)
(INTESTINAL OBSTRUCTION, etiol. and pathogen. surg.)

VITEBSKIY, Ya.D.

Osteoma of the skull. Vest.khir.74 no.8:54-57 '54 (MLRA 8:10)

1. Iz khirurgicheskogo otdeleniya (zav. Ya.D. Vitebskiy) Kurganskoy oblastnoy bol'nitsy.
(SKULL--TUMORS)

VITEBSKIY, Ya.D.

Use of fibrin film in liver rupture. Vest.khir. 75 no.4:121-123 My '55. (MLRA 8:8)

1. Iz khirurgicheskogo otdeleniya (zav.-Ya.D.Vitebskiy) Kurganskoy oblastnoy bol'nitsy.

(LIVER, rupture
surg. use of fibrin film)
(FIBRIN, therapeutic use,
fibrin film in ther. of liver rupt.)

VITEBSKIY, Ya.D.

A case of fibroma of the lung. Sov.med.19 no.10:91 O '55.
(MLRA 8:12)

1. Iz khirurgicheskogo otdeleniya (zav. Ya. D. Vitebskiy) Kurganskoy oblastnoy bol'nitsy (glavnyy vrach L.V.Protsenko)

(LUNGS, neoplasms
fibroma, diag. & surg.)
(FIBROMA
lungs, diag. & surg.)

VITEBSKIY, Ya.D., kandidat meditsinskikh nauk

Surgical treatment of mediastinal dermoid cysts. Khirurgiia no.6: 40-42 Je '54. (MLRA 7:9)

1. Iz khirurgicheskogo otdeleniya (zav. Ya.D.Vitebskiy) Kurganskoy oblastnoy bol'nitsy (glavnyy varch L.V.Protsenko)

(TERATOMA,
*mediastinum, surg.)
(MEDIASTINUM, neoplasms,
*teratoma, surg.)

VITEBSKIY, Ya.D., kandidat meditsinskikh nauk

Organization of control or agricultural accidents in Kurgan Province. Khirurgiia no.7:16-21 Jl '54. (MLRA 7:10)

1. Glavnyy khirurg Kurganskogo Obzdravotdela
(AGRICULTURE,
accid., prev. in Russia)
(ACCIDENTS,
agriculture, prev. in Russia)

VITEBSKII, Ya.D.

Detection of air in the abdominal cavity. Khirurgiia no.8:75 Ag '54. (MLRA 7:11)

1. Iz khirurgicheskogo otdeleniya Kurganskoy oblastnoy bol'nitsy.
(ABDOMEN, wounds and injuries,
manifest. by presence of air in abdominal cavity)
(WOUNDS AND INJURIES,
abdomen, manifest. by presence of air in abdominal cavity)

VITEBSKIY, Ya.D., zasluzhennyy vrach RSFSR, kand. med. nauk (Kurgan, ul. Krasina, 66. kv.3)

Treatment of children with congenital esophegeal atresia. Vest. khir. 92 no.2:75 F '64. (MIRA 17:9)

1. Iz khirurgicheskogo otdeleniya Kurganskoy oblastnoy bol'nitsy (glavnyy vrach - L.V. Protsenko).

VITEBSKIY, Ye.M., kand.med.nauk

Some clinical and immunological indices in young children following dysentery. Pediatriia no.5:61-64 '61. (MIRA 14:5)

1. Iz kafedry fakul'tetskoy i gospital'noy pediatrii (zav. - prof. M.B. Golomb) Stalinskogo meditsinskogo instituta.
(DYSENTERY)

VITEBSKIY, Ye.M., kand. med. nauk (Donetsk)

Pathogenesis and clinical aspects of gonadal dysgenesis. Probl. endok. i gorm. 9 no.5:93-97 S-O'63 (MIRA 16:12)

1. Iz kafedry fakul'tetskoy i gospital'noy pediatrii (zav. - prof. M.B. Golomb) Donetskogo meditsinskogo instituta.

VITEBSKIY, Ye.M., kand. med. nauk; SHAPARENKO, B.A., kand. med. nauk.

Chronic tonsillogenic intoxication and problems in the classification of chronic tonsillitis in children. Vestn. otorinolaring. 25 no.3:60-64 '63 (MIRA 17:1)

1. Iz kafedry bolezney ukha, nosa i gorla (zav. - prof. S.F. Letnik [deceased]) i kafedry gospital'noy pediatrii (zav. - dotsent Ye.M.Vitebskiy) Donetskogo meditsinskogo instituta.

VITEBSKIY, Ye.M. [Vitebs'kyi, IE.M.], kand.med.nauk

Clinical aspects of progeria. Ped., akush. i gin. 23 no.6:26-28 '61.
(MIRA 15:4)

1. Kafedra pediatrii (zav. - prof. M.B.Golumb [Holumb, M.B.]) Donetskogo meditsinskogo instituta (rektor - dotsent A.M.Ganichkin [Hanichkin, A.M.] i oblastnaya detskaya klinicheskaya bol'nitsa (glavnyy vrach - N.P.Yukno).

(PROGERIA)

VITEBSKIY, Yu.M. [Vitebs'kyi, IU.M.], kand.med.nauk

Method for measuring arterial pressure in children. Ped., akush. i gin. 22 no.3:26-28 '60. (MIRA 14:4)

1. Kafedra fakul'tetskoy i gospital'noy pediatrii (zav. - prof. M.B.Golomb [M.B.Holomb]) Stalinskogo meditsinskogo instituta (direktor - dotsent A.M.Ganichkin [A.M.Hanichkin]).
(BLOOD PRESSURE)

VITEC, NATALIA Romania

IONICA, Verona, Pharmacist; SAVOPOL, E., Dr; MIHAILESCU, Florica, Pharmacist; VITEC, Natalia, Pharmacist

Rumania

Institute for State Control of Drugs and Pharmaceutical Research (for all)

Bucharest, Farmacia, No 11, Nov 62, pp 683-690

"Stabilization of the Limits of Alcoholic Concentration in Tinctures and Extracts"

(4)

VITEK, A., inz.

Drawing large radius circular arcs and calculation of their points. Jemna mech opt 10 no.3:Suppl:Na pomoc technickym pracovnikum :62-64 Mr '65.

CZECHOSLOVAKIA

WAIS..ER, K; VYSTRCIL, A; VITEK, A

1. Department of Organic Chemistry, Karlova University - (for 1); 2. Institute of Organic Chemistry and Biochemistry - (for 1). Both Institutes of Czechoslovak Academy of Sciences, Prague

Prague, Collection of Czechoslovak Chemical Communications, No 12, December 1966, pp 4741-4743

"Triterpenes. Part 11: Infra-red absorption of triterpenic 1-hydroxy derivatives."

VITEK, Antonin, inz.

"Bending on presses" by Gerhard Oehler. Reviewed by Antonin Vitek. Stroj vyr 12 no.4:315 Ap'64.

VALENTA, J.; NOVA, B.; SUMBERA, J.; VITEK, B.

Patent ductus arteriosus with pulmonary hypertension in children. I. Cesk. pediat. 20 no.7:611-616 Jl '65.

Evaluation of the results of surgical treatment of children with patent ductus arteriosus combined with pulmonary hypertension. II. Ibid.:617-620

1. II. detska klinika lekarske fakulty University J.E. Purkyne v Brne (prednosta prof. dr. M. Toman, CSc.).

VITEK, B. (Brno, FDN - Cerna Pole); VALENTA, J.

Our experience with the diagnosis of canalis atrioventricularis communis. Cas. lek. cesk. 104 no.51:1399-1402 17 D '65.

1. II. detska klinika lekarske fakulty University J.E. Purkyne v Brne (prednosta prof. dr. M. Toman, CSc.). Submitted October 1964.

VITEK, B.

"Theory of back angles in disc-shaped threading tools." p. 286.

STROJIRENSTVI. (Ministerstvo tezkeho strojirenstvi, Ministerstvo presneho strojirenstvi a Ministerstvo automobiloveho prumyslu a zemedèlskych stroju). Praha, Czechoslovakia, Vol. 9, No. 4, Apr. 1959.

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 8, August 1959.
Uncla.

VITEK, B.

Calculating varying pitches of rotary-cutting tools, p. 611

STROJIRENSTVI (Ministerstvo tezkeho strojirenstvi, Ministerstvo vseobecneho strojirenstvi) Praha, Czechoslovakia, Vol. 7, no.8, Aug. 1959

Monthly List of East European Accessions (EEAI), LC, Vol. 9, no. 2, Feb. 1960

Uncl.

VITEK, Bohumil; HABANEC, Boris

Cor trilaculare biventriculare with aortic coarctation of the infantile type and Patent ductus arteriosus with unusual electrocardiographic findings in a newborn infant. Cesk. pediat. 17 no.4:350-353 Ap '62.

1. II detska klinika University J. Ev. P. v Brne, prednosta akademik O. Teyschl. II patologickoanatomicky ustav University J. Ev. P. v Brne, prednosta prof. MUDr. M. Dluhos.

(HEART DEFECTS CONGENITAL compl)
(DUCTUS ARTERIOSUS compl)
(AORTIC COARCTATION compl)
(ELECTROCARDIOGRAPHY in inf & child)

TEYSCHL, Otakar; RICNY, Drahoslav; SRACKOVA, Danuse; KOCOURKOVA, Alena; VITEK, Bohumil

Staphylococcal infections in preschool and school children. Cas.lek. cesk 100 no.31:961-964 4 Ag '61.

1. II detska klinika lekarske fakulty v Brne, prednosta akademik Otakar Teyschl.

(STAPHYLOCOCCAL INFECTIONS in inf & child)

VITEK, B.

Importance of intracardiac electrocardiography in the diagnosis of congenital heart defects in children. Cesk. pediat. 19 no.6: 495-503 Je'64

1. II. detska klinika lekarske fakulty UJEvP [University J.E. Purkyne] , Brno - prednosta: prof. dr. M.Toman, CSc.

NEVRTAL, M.; VITEK, B.

Ballistocardiogram in normal children. Cesk. pediat. 17 no.10:881-884, O '62.

1. Oddeleni experimentalni mediciny katedry patologicke fyziologie lekarske fakulty University J. Ev. Purkyne v Brne, vedouci katedry doc. dr. J. Vasku, CSc. II. detska klinika lekarske fakulty University J. Ev. Purkyne v Brne, prednosta akademik O. Teyschl.
(BALLISTOCARDIOGRAPHY)

VITEK, Bohumil, MUDr.

Stomatitis in children. Prakt. lek., Praha 35 no.14:317-322 20 July 55.

1. Z inf. odd. Kr. det. nem. v Brne, prednosta doc. MUDr. Vladimir Kluska.
(STOMATITIS, in infant and child)

HURUBAN, Ivo; VITEK, Bohumir

Pressure distribution in the cellar and foundation masonry. Acta tech Cz t no.4:353-370 '60. (EEAI 9:10)

1. Czechoslovak Academy of Sciences, Institute for Theoretical and Applied Mechanics, Building Department, Brno.
(Masonry) (Foundations) (Basements)

VITEK, B.

TECHNOLOGY

PERIODICALS: POZEMNI STAVBY Vol. 7, no. 2, Feb. 1959

VITEK, B.: HRUBAN, I. Comparison of some regulations of our CSN 73 2001 standards with regulations of the PN-56/B 0320 Polish standard on the designing of reinforced-concrete structures. p. 85

Monthly List of East European Accessions (EEAI) LC Vol 8, no. 5
May 1959, Unclass.

VITEK, Bohumil; VALENTA, Jiri

Value of intracardiac electrocardiography in distinguishing the left and right ventricle. Scr. med. fac. med. Brunensis 36 no.7:363-369 '63.

1. II. detska klinika University J.Ev.Purkyne v Brne. Prednosta: prof. MUDr. M. Toman, CSc.

*

VITEK, Bohumil

SURNAME (in caps); Given Names

(2)

Country: Czechoslovakia

Academic Degrees: [not given]

Affiliation: Children's Clinic II of the University (II detska klinika University), Brno; Chief (Prednosta): Academician (Akademik) Otakar Topschl

Source: Prague, Fysiatricky Vestnik, Vol XXIX, No 4, August 1961, pp 211-214

Data: "The Influence of Baths on the White Blood Count in Children with Rheumatic Fever."

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VITEK, B.

TECHNOLOGY

Periodical: INZENYRSKE STAVBY. Vol. 3, no. 12, Dec. 1955

VITEK, B.; Hruban, I. Universal table for calculating the dimensions of reinforced-concrete cross sections. p. 502

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no. 3
March 1959, Uncl.

VITEK, P.

Control of hobbing cutters of large modules. p. 281. (Strojirenstvi, Vol. 7, No. 4, Apr 1957. Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 8, Aug 1957. Uncl.

HRUBAN, I.; VITEK, B.

"Effect of earthquakes on hydraulic structures in the seismic areas of Slovakia."

p. 239 (Stavebnicky Casopis) Vol. 5, no. 4, 1957
Prague, Czechoslovakia

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4, April 1958

VITEK, B.

Tolerance of dimensions of construction elements in prefabrication. p.143. (Pozemni Stavby, Vol.5, no.3, Mar. 1957) Praha

SO: Monthly List of East European Accession (EEAL) LC, Vol.6, no.7, July 1957. Uncl.

VITEK, B.

Recent Soviet works on prestressed concrete. p.159 (Inzenyrske Stavby, Vol. 5 no. 3 March 1957) Praha

SO: Monthly List of East European Accession (EEAL) LC, Vol. 6 no. 7, July 1957. Uncl.

EXCERPTA MEDICA Sec. 7 Vol. 9/8 Aug 55

VITEK B.

1653. VÍTEK B. Infek. odd. Krajské dětské nemoc. v Brně. Kojení a infekční nemoci. Nursing and infectious diseases LÉK. LISTY 1954, 9/24 (553-555)

The opinion is contended that intra-uterine transfer of antibodies is much superior to that through breast milk, as the intestines of the infant do not absorb the antibodies. The infant is not protected against pertussis and pyogenic bacteria. Breast-feeding is not allowed in open tb, typhoid fever, infectious hepatitis, dysentery and infantile paralysis, or in pertussis or influenza of the mother. In the 2 last-mentioned instances, boiled breast-milk is allowed. Bloch - Doetinchem (XX, 7)

VITEK, B.

VITEK, B. New standard for designing constructions from simple and prestressed concrete in the Soviet Union. p. 35, Vol 5, no. 1, 1956
SOVETSKA VEDA: STAVEBNICTVI
Praha, Czechoslovakia

SOURCE: East European Accessions List (EEAL) Vol. 6, No. 4--April 1957

VITEK, Bohumir, doc., inz., dr.

The 4th National Conference on Prestressed Concrete. Inz stavby 10 no. 2:64-65 F '62.

VITEK, Bohumil; TEYSCHIL, Otakar

Leukocytosis after intradermal application of streptokinase in children with rheumatic fever. Cesk.pediat. 15 no.9:806-811 S '60.

1. II detska klinika v Brne, prednosta akademik Otakar Teyschl Biochemicke oddeleni KDN v Brne, prednosta prim. dr. Otakar Teyschl.

(RHEUMATIC FEVER in infancy & childhood)
(STREPTODORNASE AND STREPTOKINASE pharmacol.)
(LEUKOCYTOSIS etiol.)

VITEK, Bohumil, MUDr.

Breast feeding and infectious diseases. Lek. listy, Brno 9 no.24: 553-555 15 Dec 54.

1. Z infekcniho oddeleni Krajske detske nemocnice v Brne. Prednosta doc. MUDr Vlad. Kluska

(COMMUNICABLE DISEASES
in inf. & mother, breast feeding indic.)
(INFANT NUTRITION
breast feeding indic. in commun. dis. of mother or inf.)

VITEK, B.; SUMBERA, J.

Total congenital atrioventricular block in 10 children. Cesk. pediat. 18 no.2:129-134 F '63.

1. II. detska klinika lekarske fakulty UJEvP v Brne, prednosta akademik O. Teyschl.

(HEART BLOCK) (HEART DEFECTS CONGENITAL)
(HYPERTENSION PULMONARY)

SUMBERA, J.; VITEK,B.; VALENTA,J.

Coronary sinus and its diagnosis. Cas.lek.cesk.102 no.49:1337-1342 6 D'63.

1. II. detska klinika lekarske fakulty UJEvP v Brne; prednosta: akademik O.Teyschl.

VITEK, B.; SUMBERA, J.; MRAZ, J.

Fatal ventricular paroxysmal tachycardia in a 5-year-old girl with Ebstein's anomaly. Cesk. pediat. 20 no.11:980-983 N '65.

1. II. detska klinika (prednosta prof. dr. M. Toman, CSc.) a Ustav soudniho lekarstvi (prednosta MUDr. S. Janousek, CSc.) lekarske fakulty University J.E. Purkyne v Brne.

SUMBERA, J.; VALENTA, J.; VITEK, B.; NOVAK, M.

Contribution to the oximetry of the blood in the right atrium. Cas. lek. Cesk. 104 no.45:1237-1239 12 N '65.

1. II. detska klinika lekarske fakulty University J.E. Purkyne v Brne (prednosta prof. dr. M. Toman, CSc.) a II. chirurgicka klinika lekarske fakulty University J.E. Purkyne v Brne (prednosta prof. dr. J. Navratil, DrSc.).

HRUSKA, Vladimir; VITEK, Dionysius; PAVELKA, Bohuslav

Lipomas of the stomach. Rozhl. chir. 41 no.2:115-122 F '62.

1. Chirurgicke odd. OUNZ v Jablonci n. N., prednosta dr. V. Hruska Chirurgicke odd. nemocnice OUNZ Decin v Ceske Kamenici, prednosta dr. D. Vitek Rentgenologicke odd. polikliniky OUNZ v Liberci, prednosta dr. B. Pavelka.

(STOMACH NEOPLASMS surg) (LIPOMA surg)

VITEK, F.

TECHNOLOGY

Periodical AUTOMATISACE. No. 11, Nov. 1958.

VITEK, F. Use, Maintenance, and causes of defects of oil-jet controllers. p. 354.

On the occasion of the 41st anniversary of the Great October Revolution. p. 353.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, no. 3, March, 1959. Uncl.

VITEK, Felix, inz.

Hydraulic regulators. Automatizace 6 no.11:Suppl: Kurs praktické automatizace:78-80 N '63.

1.Závody prumyslové automatizace, n.p., Praha.

VIDEK, Jan, inz. CSc.

Concreting and assembling by the cantilever method. Inz stavby 12 no.6:235-243 Je '64.

1. Stavby silnic a zeleznic National Enterprise, Prague.

VITEK,J.

Significance of pathological afference in the etiopathogenesis of neuroses. Cas.lek. cesk. 103 no.13:339-344 27 Mr '64.

1. Neurologicke oddeleni fakultni polikliniky v Praze 2; vedouci: prof.dr. J.Vitek, DrSc.

HERMANSKY, F.; HRODEK, O.; HERMANSKA, Z.; VITEK, J.; KASTILOVA, B.

Antithrombin activity in the neonatal period. Cas. lek. cesk. 101 no.39:1173-1177 28 S '62.

1. Laborator pro patofyziologii krvetvorby a jater pri I interni klinice fakulty vseobecneho lekarstvi KU v Praze, prednosta prof. dr. V. Honig. II detska klinika fakulty detskeho lekarstvi KU v Praze, prednosta prof. dr. J. Houstek Ustredni hematologicka laborator fakultni nemocnice v Praze, prednosta MUDr. M. Suchan.
(THROMBIN) (INFANT NEWBORN)

HEINTZ, E., inz.; VITEK, J., inz.

Lubrication of wheel flanges with solid lubricants. Zel dop tech 11 no.7:199-201 '63.

VITEK, J.

The sharing of combines by Slovakia and the Czech provinces and the result of their work. p.248.
(Mechanisace Zemedelstvi, Vol. 7, No. 11, June 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessiors (EEAL) LC. Vol. 6, No. 9, Sept. 1957. Uncl.

VITEK, Jan, inz., CSc.; KADECKA, S.

Cantilever assembling of bridges with dry joints. Inz stavby 11 no.8:317-318 Ag '63.

VITEK, J.

Assuring the efficient operation of hop picking machines. p.299.
(Mechanisace Zemedelstvi, Vol. 7, No. 13, July 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessiors (EEAL) LC. Vol. 6, No. 9, Sept. 1957. Uncl.

VITEK, Jan, inz., C.Sc.

Experimental section of road surface made of prestressed concrete.
Inz stavby 9 no.10:373-378 O '61.

1. Stavby silnic a zeleznic, n.p.

43448

S/263/62/000/024/001/002
E194/E455

AUTHORS: Hošek Josef, Veselý Karel, Vítek Jan

TITLE: A device for measuring liquid flow

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk, Izmeritel'naya tekhnika, no.24, 1962, 23, abstract 32.24.137 P. (Czech. pat. cl. 42e, 23/05, no.97754, December 15, 1960)

TEXT: An electrical conductor is located in the liquid flowing from a tube; another conductor is connected to a sliding contact, a galvanometer and battery; the whole forms a resistance-measuring bridge. In the null condition, the length of the second conductor to the place where it is connected to the sliding contact indicates the liquid flow to a certain scale. If the liquid is a poor conductor of electricity, a further wire with contacts is fixed above the current-carrying wire and pressed against it by the weight of liquid, thus making the necessary contact. 2 figures.

[Abstracter's note: Complete translation.]

Card 1/1

ZEJDA, V.; VITEK, J.; KASPAR, Z.

Lymphogradiography in clinical practice. Polski przegl. chir. 31 no.1: 23-27 Jan 59.

1. Z I Kliniki Chirurgicznej w Brnie Kierownik: prof. MU dr J. Podlaha. Adres autorow: Brno, I Chirurgicka Klinika, ul. Pekarska 53, CSR.
(LYMPHATIC SYSTEM, radiography,
(Pol))

ZEJDA, V.; VRUBEL, F.; VITEK, J.

Intestinal obstruction due to a gallstone. Rozhl.chir. 39 no.9: 600-606 S '60.

1. I. chirurgicka klinika University v Brne, prednosta prof. dr. J. Podlaha.
(CHOLELITHIASIS compl.)
(INTESTINAL OBSTRUCTION etiol.)

RUMSTUKOVA, J.;KRAVKOVA, L.;VITEK, J.;ROZMARICOVA, K.

Typhoid complications and chloramphenicol. Lek. listy, Brno 7 no.19:470-473 1 Oct 1952. (CLML 23:2)

1. Of the Second Internal Clinic (Head--Prof. J. Polcak, M.D.) of Masaryk University, Brno.

VITEK, J.

Experience of the German Democratic Republic with general repair of agricultrual machinery by the exchange system. p. 467.

MECHANISACE ZEMEDELSTVI. Praha. Vol. 4, no. 24, Dec. 1954.

SOURCE: East European Accessions List (EEAL), LC, Vol. 5, no. 3, March 1956

VITEK, Frantisek; DIENSTBIER, Zdenek

Exponential model of biological excretion of radioisotopes and its use in calculating the absorbed radiation dose. Jaderna energie 6 no.11:383-385 N '60.

1. Biofyzikalni ustav lekarske fakulty, Karlova universita.

DIENSTBIER,Z.; VITEK,F.

Peripheral blood changes after internal irradiation. I. Effect of radiophosphorus P32. Sborn. lek. 62 no.6:173-184 1960.

1.Biofyzikalni ustav fakulty vseobecneho lekarstvi University Karlovy v Praze, prednosta doc. dr. Z. Dienstbier.
(PHOSPHORUS radioactive)
(BLOOD CELLS radiation eff.)

89375

Z/038/60/000/011/004/006
A201/A026

21.6300

AUTHORS: Vítek, František; Dienstbier, Zdeněk

TITLE: An Exponential Model of Biological Excretion of Radioisotopes and Its Application to the Calculation of the Absorbed Radiation Dose

PERIODICAL: Jaderná energie, 1960, No. 11, pp. 383 - 385

TEXT: C.G. Stewart (Ref. 2) proposed a model for the determination of the absorbed radiation dose from an injected radioisotope. The authors of this article have improved this model to make it correspond more closely to the physiological assumptions. The schematic diagram of the Stewart model is shown in Figure 1, that of the improved Vítek-Dienstbier model is shown in Figure 2. In this latter model, the isotope with a physical decay constant λ_o is excreted from the organism at the speed of λ_1, transits from the system I (blood + body organs without the critical organ) into the system II (critical organ) at the speed of λ_2, and is returned to the blood at the speed of λ_3. The activity change with time A_1 (t) in the system I can be expressed by the equation

$$\frac{d A_1 (t)}{dt} = - (\lambda_o + \lambda_1 + \lambda_2) A_1 (t) + \lambda_3 A_2 (t) \quad (9)$$

Card 1/1 2

89375

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An Exponential Model of Biological Excretion of Radioisotopes and Its Application to the Calculation of the Absorbed Radiation Dose

and the activity change with time in the critical organ II A_2 (t) can be expressed by the equation

$$\frac{d A_2 (t)}{dt} = \lambda_2 A_1 (t) - (\lambda_0 + \lambda_3) A_2 (t) \qquad (10)$$

By solving the system of differential equations (9), (10) we receive

$$A_1 (t) = A_0 \frac{\lambda_3 - \lambda_1 - \lambda_2 + \gamma}{2\gamma} e^{-\frac{1}{2}[-(2\lambda_0+\lambda_1+\lambda_2+\lambda_3)+\gamma]t} + \left(1 - \frac{\lambda_3 - \lambda_1 - \lambda_2 + \gamma}{2\gamma}\right) e^{-\frac{1}{2}[(2\lambda_0 + \lambda_1 + \lambda_2 + \lambda_3) - \gamma]t} \qquad (11)$$

$$A_1 (0) = A_0,$$

$$\gamma = \sqrt{(\lambda_1 + \lambda_2 + \lambda_3)^2 - 4\lambda_1\lambda_2} \qquad (12)$$

Card 2/12

89375

Z/038/60/000/011/004/006
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$$A_2(t) = A_0 \frac{\lambda_2}{\gamma} \left\{ e^{\frac{1}{2}[-(2\lambda_0 + \lambda_1 + \lambda_2 + \lambda_3) + \gamma]t} - e^{\frac{1}{2}[-(2\lambda_0 + \lambda_1 + \lambda_2 + \lambda_3) - \gamma]t} \right\} \quad (13)$$

Finding the maximum of the function $A_2(t)$ we can determine the time t_{max} in which the isotope concentration in the critical organ will reach its maximum. From the equation (13) we receive

$$t_{max} = \frac{1}{\gamma} \ln \frac{2\lambda_0 + \lambda_1 + \lambda_2 + \lambda_3 + \gamma}{2\lambda_0 + \lambda_1 + \lambda_2 + \lambda_3 - \gamma} \quad (14)$$

The excretion speed is given by the equation

$$Y(t) = \lambda_1 A_1(t) \quad (15)$$

Using the equation (11) we receive

$$Y(t) = A_0 \frac{\lambda_1 (\lambda_3 - \lambda_1 - \lambda_2 + \gamma)}{2\gamma} e^{\frac{1}{2}[-(2\lambda_0 + \lambda_1 + \lambda_2 + \lambda_3) + \gamma]t} + A_0 \lambda_1 \left(1 - \frac{\lambda_3 - \lambda_1 - \lambda_2 + \gamma}{2\gamma}\right) e^{\frac{1}{2}[-(2\lambda_0 + \lambda_1 + \lambda_2 + \lambda_3) - \gamma]t} \quad (16)$$

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The average isotope concentration C_2 (t) in the critical organ of a mass m_2 grams, and an activity A_2 (t) expressed in μc, is

$$C_2 (t) = \frac{A_2 (t)}{m_2} \ (\mu c/gram) \qquad (17)$$

The average isotope concentration in the rest of the body of a total mass m grams is then

$$C_1 (t) = \frac{A_1 (t)}{m - m_2} \qquad (18)$$

In the following only β-emitters are considered. The average concentration C(μc/ /gram) corresponds to $3.7 \cdot 10^4 \cdot C$ (decay/sec $\cdot$ gram). The mean β-radiation energy is $\overline{E}_\beta$ (Mev) $= 1.6 \cdot 10^{-6} \cdot \overline{E}_\beta$ (erg). The unit of the absorbed radiation dose (1 rad) corresponds to the absorption of 100 erg/gram. Provided that the dimensions of the critical organ are larger than the β-particle range in that organ, we can calculate the absorbed radiation dose in the critical organ in time t * from the equation

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$$D_{\beta\,2}\,(t^*) = K \int_0^{t^*} C_2\,(t)\,dt \ \text{(rad)} \qquad (19)$$

$$K = 3.7 \cdot 10^4 \cdot 1.6 \cdot 10^{-6} \cdot 10^{-2} \cdot 3{,}600 \cdot 24\ E = 51.2\ E \ \text{(rad/den)} \qquad (20)$$

Substituting from (13), (17) into (19), and integrating, we receive

$$D_{\beta\,2}\,(t^*) = \frac{51.2}{m_2} \cdot \frac{2 A_0 \lambda_2 E_\beta}{\gamma'}$$

$$\left\{ - \frac{\gamma'}{2\left[\lambda_0 (\lambda_0 + \lambda_1 + \lambda_2 + \lambda_3) + \lambda_1 \lambda_3\right]} + \right.$$

$$\left. + \frac{1}{2\lambda_0 + \lambda_1 + \lambda_2 + \lambda_3 + \gamma'} e^{\frac{1}{2}\left[- (2\lambda_0 + \lambda_1 + \lambda_2 + \lambda_3) - \gamma'\right] t^*} + \right.$$

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$$+ \frac{1}{-(2\lambda_0 + \lambda_1 + \lambda_2 + \lambda_3) + \gamma} e^{\frac{1}{2}[-(2\lambda_0 + \lambda_1 + \lambda_2 + \lambda_3) + \gamma]t^*} \text{ (rad)} \quad (21)$$

if $\lambda_0, \lambda_1, \lambda_2, \lambda_3$, are expressed in days $^{-1}$, A_0 in μc, and t* in days. By analogy, the absorbed radiation dose in the rest of the body is given by

$$D_{\beta\ 1}(t^*) = \int_0^{t^*} KC_1(t)\,dt \quad (22)$$

By substitution from equation (11), (18) and integration, we receive

$$D_{\beta\ 1}(t^*) = \frac{51.2\,\bar{E}_\beta}{m - m_2} A_0 \left\{ \frac{\lambda_0 + \lambda_3}{\lambda_0(\lambda_0 + \lambda_1 + \lambda_2 + \lambda_3) + \lambda_1\lambda_3} + \right.$$

$$\left. + \frac{\lambda_3 - \lambda_1 - \lambda_2 + \gamma}{\gamma[-(2\lambda_0 + \lambda_1 + \lambda_2 + \lambda_3) + \gamma]} e^{\frac{1}{2}[-(2\lambda_0 + \lambda_1 + \lambda_2 + \lambda_3) + \gamma]t^*} + \right.$$

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$$+ \frac{\lambda_3 - \lambda_1 - \lambda_2 - \gamma}{\gamma(2\lambda_0 + \lambda_1 + \lambda_2 + \lambda_3 + \gamma)} e^{\frac{1}{2}[-(2\lambda_0 + \lambda_1 + \lambda_2 + \lambda_3) - \gamma]t^*} \} \text{ (rad)} \quad (23)$$

The value of the effective half-life of the radioisotope for the whole body can be determined from the equation

$$T_{ef} \text{ (whole body)} = \frac{\ln 2}{\lambda_0 + \lambda_1} \quad (24)$$

The value of the constants $\lambda_1, \lambda_2, \lambda_3$, can be obtained by the comparison of the equation (16) with the excretion equation which is derived from experiments. When comparing the results obtained according to the Steward model with those obtained according to the new model, it is seen that there is no substantial difference between them. The new model was verified by the following experiments: Six rats of the Wistar-Bioveta family were injected 25 μc P-32 in the form of Na_2HPO_4 in isotonic solution. Excretion by both stool and urine was measured always during 24 hours. The average excretion values are shown in Figure 3. The curve of the excreted activity can be expressed by the equation

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$$Y(t) = 2.75\, e^{-0.69492\, t} + 0.15\, e^{-0.05285\, t} \qquad (29)$$

By comparison of the equation (29) and the equation (16) the constants were established as follows: $\lambda_1 = 0.07548$ day $^{-1}$; $\lambda_2 = 0.53777$ day $^{-1}$; $\lambda_3 = 0.03760$ day $^{-1}$. The physical decay constant of P-32 $\lambda_0 = 0.04846$ day $^{-1}$. The time in which the phosphor concentration in the critical organ reaches its maximum value t_{max}, measured from the moment of the injection, is 4 days according to the equation (14). The activity in the bones of the rats was measured after the injection of 25 μc P-32 (Fig. 4) and 5 μc P-32 (Fig. 5). The measurement results were compared to the activity values calculated according to equation (13), assuming that the skeleton weight represents 10% of the total body weight (curve 2, Figure 4 and 5). The theoretically determined results were compared with the experimental ones and a fair agreement was found in the determination of the time in which the P-32 concentration in the skeleton reaches its maximum, and in the incorporated quantity of the isotope in the critical organ. This makes it possible to determine

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the absorbed radiation dose on the grounds of the excreted quantity of the radioisotope. However, the method is not quite accurate mainly due to the difficulties in the precise determination of the excreted activity, and to the subjective errors which may occur in the determination of the equation for the excretion speed. The method will be further tested using other radioisotopes.

ASSOCIATION: Biofyzikální ústav lékařské fakulty KU (Biophysical Institute, Medical Department, KU)

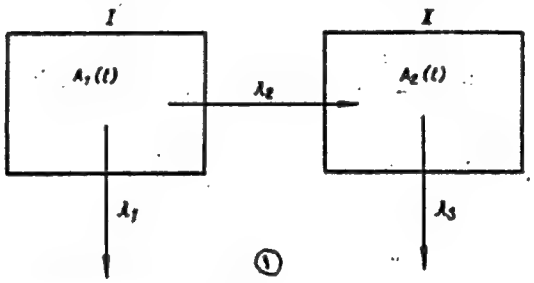

Figure 1: Schematic diagram of the Stewart model; I - whole body without the critical organ, II - critical organ

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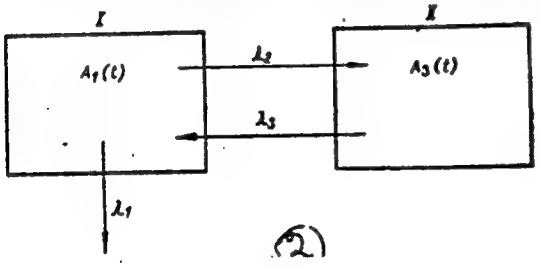
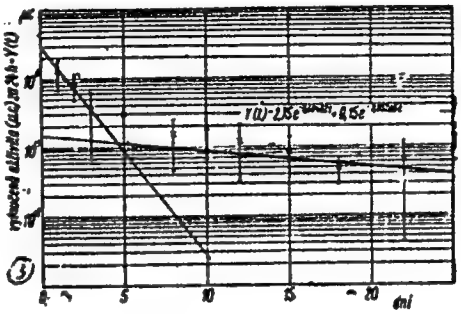
Figure 2: Schematic diagram of the Vitek-Dienstbier model; I - whole body without the critical organ, II - critical organ



(2)

Figure 3: The excreted P-32 activity (μc) after the injection of 25 μc P-32 in rats. (Text along the axis of ordinates) excreted activity (μc) in 24 h= Y(t). (Text along the axis of abscissæ) days



(3)

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Figure 4: Average P-32 concentration (μc/gram) after the intravenous administration of 25 μc P-32 in bones of rats, in dependence on the time elapsed since the administration. Curve 1 = bone ash; 2 = calculated concentration; 3 = bone

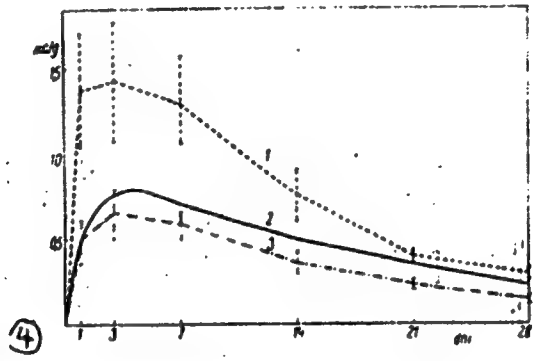

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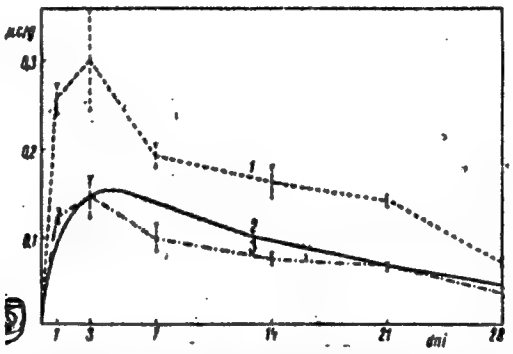
Figure 5: Average P-32 concentration (μc/g) after the intravenous administration of 5 μc P-32 in the bones of rats in dependence on the time elapsed since the administration. Curve 1 = bone ash; 2 = calculated concentration; 3 = bone



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Abs Jour : Ref Zhur - Biol., No 16, 1958, 74679

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Inst : -
Title : Circulating Anti-Coagulant of the Antithromboplastin Type During Congenital Syphylis.

Orig Pub : Casop. lekaru ceskych, 1957, 96, No 31, 993-998.

Abstract : No abstract.

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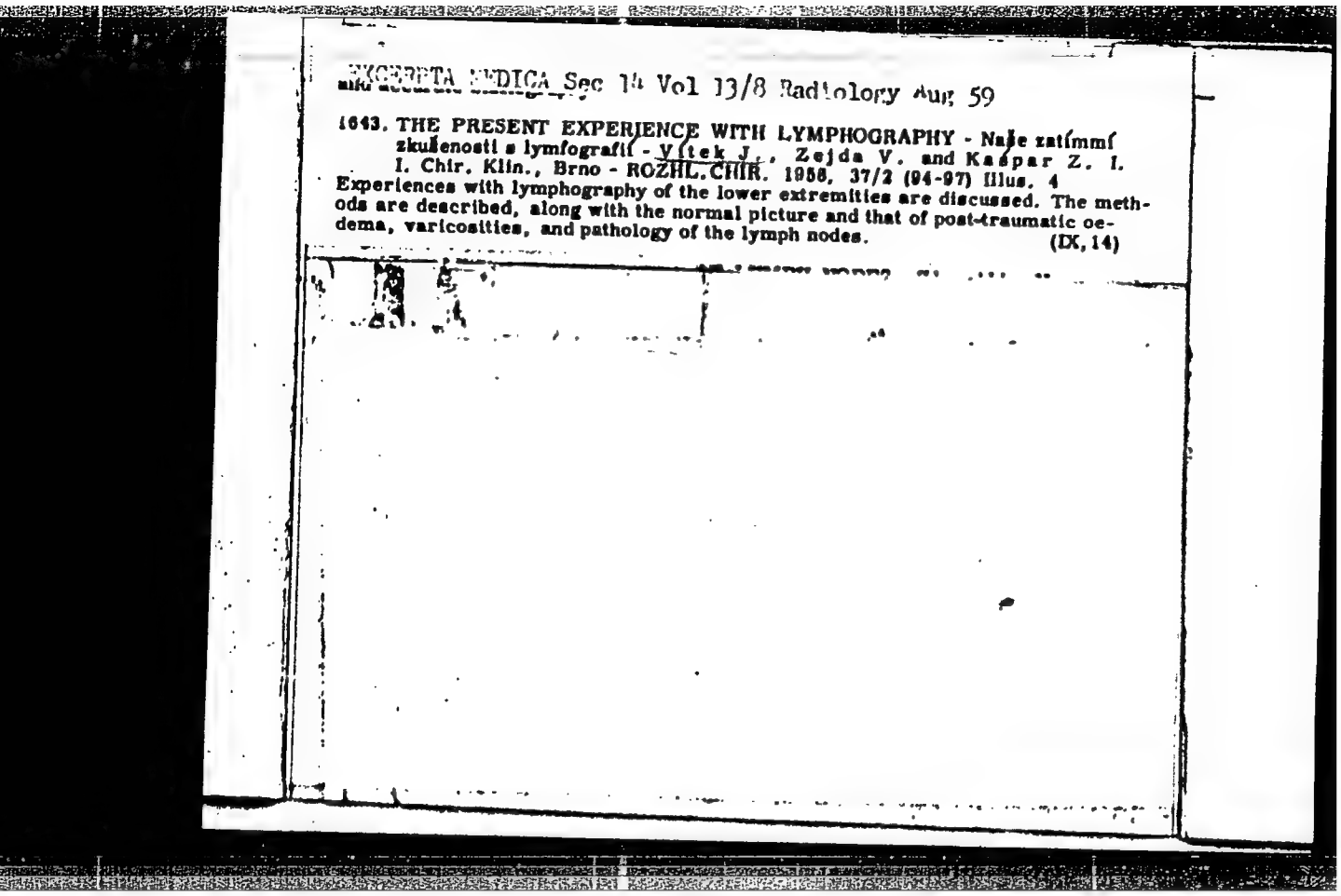
3446. PERSONAL EXPERIENCE WITH LYMPHOGRAPHY - Naše zatímní zkušenosti s lymfografií - Vítek J., Zejda V. and Kašpar Z. I. Chir. Klin., Brno - ROZHL. CHIR. 1958, 37/2 (94-97) Illus. 4

Experiences with lymphography of the lower extremities are discussed. The methods are described, along with the normal picture and that of post-traumatic oedema, varicosities, and pathology of the lymph nodes. (IX, 14)



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Experiences with lymphography of the lower extremities are discussed. The methods are described, along with the normal picture and that of post-traumatic oedema, varicosities, and pathology of the lymph nodes. (IX, 14)

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ACC NR: AP6005714 SOURCE CODE: CZ/0082/65/000/003/0228/0234

AUTHOR: Vitek, J. 21 B

ORG: Neurological Department, Faculty Polyclinic, Prague (Neurologicke oddeleni fakultni polikliniky)

TITLE: Cerebral arteriosclerosis, hypertensive disease and the cervicocranial syndrome with irritation of the posterior cervical sympathicus

SOURCE: Ceskoslovenska neurologie, no. 3, 1965, 228-234

TOPIC TAGS: circulatory system disease, nervous system disease, brain, neurology, encephalology

ABSTRACT: Importance of the cervicocranial syndrome in differential diagnosis of cerebral arteriosclerosis and hypertensive disease is discussed. Headache, dizziness and pseudoneurasthenia should not be attributed primarily to vascular diseases, as they are frequently of vertebrogenic nature. Treatment should first be directed to the cervical spine. Treatment showed an improvement of hypertension in 78% of the cases treated. Orig. art. has: 4 figures and 5 tables. [JPRS]

SUB CODE: 06 / SUBM DATE: none / ORIG REF: 019

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